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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/412,097 10/04/99 THOMSEN J C11.12-0003

MM91/0719

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EXAMINER

HAMDAN, W

ART UNIT

PAPER NUMBER

2858

DATE MAILED:

07/19/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/412,097

Applicant(s)

THOMSEN ET AL.

Examiner

Wasseem H Hamdan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 July 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims


- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).


Glenn W. Brown
Primary Examiner

Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____

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Part III - DETAILED ACTION

Amendment

1. This office action is in response to applicant's amendment filed on 07/06/2001.
2. The rejection of claims 1, 3, 4, 8-10, 12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Budde et al. (US Patent Number 5,431,134) in view of Richeson, Jr. et al. (US Patent Number 4,109,630) have been maintained.
3. The rejection of claims 2 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Budde et al. (US Patent Number 5,431,134) in view of Richeson, Jr. et al. (US Patent Number 4,109,630), further in view of Luteran (US Patent Number 4,109,630) have been maintained.
4. The rejection of claims 5-7, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Budde et al. (US Patent Number 5,431,134) in view of Richeson, Jr. et al. (US Patent Number 4,109,630), further in view of Dickmeyer et al. (US Patent Number 5,998,988) have been maintained.
5. The rejection of claims 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Budde et al. (US Patent Number 5,431,134) in view of Richeson, Jr. et al. (US Patent Number 4,109,630), further in view of Berardinelli (US Patent Number 5,814,723) has been maintained.
6. Claims 17-20 are confirmed canceled by the amendment.

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Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite and unclear for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1 and 12 which recites the limitations “a sensor securable in the timing port.....” and also recites “proximate a variable reluctance sensor” is indefinite as the scope of the claim is unclear and not specific. Are they are two sensors or one ? (please clarify by claiming that), and if they are one sensor how a sensor can be secured to ... and proximate? (please clarify by claiming that).

Regarding claims 1 and 12 which recites the limitations “timing mark.....” is indefinite as the scope of the claim is unclear and not specific. Please clarify by claiming what is claimed by “timing mark”.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1, 3, 4, 8-10, 12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Budde et al. (US Patent Number 5,431,134) in view of Richeson, Jr. et al. (US Patent Number 4,109,630).

Regarding claims 1 and 12, Budde et al. disclose an ignition timing device and method for timing an engine having a timing port, the ignition timing device [column 2: lines 25-44] comprising:

a sensor to provide a timing mark signal indicative of presence of a timing mark [FIG. 4; column 2: lines 45-52];

an ignition sensor adapted to provide an ignition signal indicative of the occurrence of an ignition spark [FIG. 1 - FIG. 3; column 2: lines 33-36];

an indicator receiving the output signal and operable as a function thereof column 8: lines 46-57].

Budde et al. disclose the essential elements of the claimed invention. However, Budde et al. do not explicitly disclose a comparator receiving the timing mark signal and the ignition signal, the comparator providing an output signal indicative of substantial simultaneous occurrence of the timing mark signal and the ignition signal. Richeson, Jr. et al. disclose a comparator receiving the timing mark signal and the ignition signal, the comparator providing an output signal indicative of substantial simultaneous occurrence of the timing mark signal and the ignition signal [Fig. 7; column 14: lines 18-28]. It would have been obvious to a person having

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ordinary skill in the art at the time of the invention was made to modify the teachings of Budde et al. by including comparator. The skilled artisan would have been motivated to modify Budde et al. as above for the purpose of providing an output signal indicative of substantial simultaneous occurrence of signals from both sensors [Richeson, Jr. et al.: Column 7: lines 34-67].

Budde et al. disclose the essential elements of the claimed invention. However, Budde et al. do not explicitly disclose variable reluctance sensor. Richeson, Jr. et al. disclose variable reluctance sensor [column 3: lines 45-53]. It would have been obvious to a person having ordinary skill in the art at the time of the invention was made to modify the teachings of Budde et al. by including variable reluctance sensor. The skilled artisan would have been motivated to modify Budde et al. as above for the purpose modulating the carrier signal [Richeson, Jr. et al.: column 3: lines 45-53].

Budde et al. and Richeson, Jr. et al. disclose the essential elements of the claimed invention. However, Budde et al. and Richeson, Jr. et al. do not explicitly disclose a sensor securable in the timing port. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have the sensor secured, otherwise it will be loose and not serve the application that intended to be used for. The skilled artisan would have been motivated to modify Budde et al. and Richeson, Jr. et al. as above because such variation is expected and well known in the art. *In re Ahlert*, 424 F.2d 1088, 1091, 165 USPQ 418,420 (CCPA 1970).

Applicant may consider overcoming the above assertion of obviousness by demonstrating that

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provision of the above design achieves unexpected results relative to the prior art. *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990).

Regarding claims 3 and 14, Budde et al. disclose the essential elements of the claimed invention. However, Budde et al. do not explicitly disclose means for filtering. Richeson, Jr. et al. disclose means for filtering [FIG. 4 (24); column 4: lines 33-35; column 7: lines 44-49]. It would have been obvious to a person having ordinary skill in the art at the time of the invention was made to modify the teachings of Budde et al. by including means for filtering. The skilled artisan would have been motivated to modify Budde et al. as because it well known and expected in the art.

Regarding claim 4, Budde et al. disclose the essential elements of the claimed invention. However, Budde et al. do not explicitly disclose variable reluctance sensor. Richeson, Jr. et al. disclose variable reluctance sensor [column 3: lines 45-53]. It would have been obvious to a person having ordinary skill in the art at the time of the invention was made to modify the teachings of Budde et al. by including variable reluctance sensor. The skilled artisan would have been motivated to modify Budde et al. as above for the purpose modulating the carrier signal [Richeson, Jr. et al.: column 3: lines 45-53].

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Regarding claim 8, Budde et al. disclose the essential elements of the claimed invention. However, Budde et al. do not explicitly disclose a comparator receiving the timing mark signal and the ignition signal, the comparator providing an output signal indicative of substantial simultaneous occurrence of the timing mark signal and the ignition signal. Richeson, Jr. et al. disclose a comparator receiving the timing mark signal and the ignition signal, the comparator providing an output signal indicative of substantial simultaneous occurrence of the timing mark signal and the ignition signal [Fig. 7; column 14: lines 18-28]. It would have been obvious to a person having ordinary skill in the art at the time of the invention was made to modify the teachings of Budde et al. by including comparator. The skilled artisan would have been motivated to modify Budde et al. as above for the purpose of providing an output signal indicative of substantial simultaneous occurrence of signals from both sensors [Richeson, Jr. et al.: Column 7: lines 34-67].

Regarding claims 9 and 10, Budde et al. and Richeson, Jr. et al. disclose the essential elements of the claimed invention except wherein the selected threshold is constant, and it is a function of at least one previous detected spark. Official Notice is taken that wherein the selected threshold is constant, and it is a function of at least one previous detected spark is well-known and expected in the art. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the selected threshold is constant, and it is a function of at least one previous detected spark. The skilled artisan would have been motivated to modify

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Budde et al. and Richeson, Jr. et al. Because it is well known in the art. *In re Ahlert*, 424 F.2d 1088, 1091, 165 USPQ 418,420 (CCPA 1970). Applicant may consider overcoming the above assertion of obviousness by demonstrating that provision of the above design achieves unexpected results relative to the prior art. *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990).

11. Claims 2 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Budde et al. (US Patent Number 5,431,134) in view of Richeson, Jr. et al. (US Patent Number 4,109,630), further in view of Luteran (US Patent Number 4,109,630).

Regarding claims 2 and 13, Budde et al. and Richeson, Jr. et al. disclose the essential elements of the claimed invention. However, Budde et al. and Richeson, Jr. et al. do not explicitly disclose a delay element. Luteran disclose a delay element [column 14: lines 45-53]. It would have been obvious to a person having ordinary skill in the art at the time of the invention was made to modify the teachings of Budde et al. and Richeson, Jr. et al. by including a delay element. The skilled artisan would have been motivated to modify Budde et al. and Richeson, Jr. et al. as above for the purpose delaying the signal [Luteran: column 2: lines 42-43].

Budde et al. disclose the essential elements of the claimed invention. However, Budde et al. do not explicitly disclose a comparator receiving the timing mark signal and the ignition signal, the comparator providing an output signal indicative of substantial simultaneous

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occurrence of the timing mark signal and the ignition signal. Richeson, Jr. et al. disclose a comparator receiving the timing mark signal and the ignition signal, the comparator providing an output signal indicative of substantial simultaneous occurrence of the timing mark signal and the ignition signal [Fig. 7; column 14: lines 18-28]. It would have been obvious to a person having ordinary skill in the art at the time of the invention was made to modify the teachings of Budde et al. by including comparator. The skilled artisan would have been motivated to modify Budde et al. as above for the purpose of providing an output signal indicative of substantial simultaneous occurrence of signals from both sensors [Richeson, Jr. et al.: Column 7: lines 34-67].

12. Claims 5-7, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Budde et al. (US Patent Number 5,431,134) in view of Richeson, Jr. et al. (US Patent Number 4,109,630), further in view of Dickmeyer et al. (US Patent Number 5,998,988).

Regarding claim 5, Budde et al. and Richeson, Jr. et al. disclose the essential elements of the claimed invention. However, Budde et al. and Richeson, Jr. et al. do not explicitly disclose a support tube insertable in the port and having a bore extending from a first end to a second end; a sensor housing insertable in the bore; and a variable reluctance probe disposed in the sensor housing. Dickmeyer et al. disclose a support tube insertable in the port and having a bore extending from a first end to a second end; a sensor housing insertable in the bore; and a variable reluctance probe disposed in the sensor housing [FIG. 2 - FIG. 9]. It would have been obvious to a person having ordinary skill in the art at the time of the invention was made to modify the

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teachings of Budde et al. and Richeson, Jr. et al. by including limitations mentioned above. The skilled artisan would have been motivated to modify Budde et al. and Richeson, Jr. et al. as above for the purpose protecting the sensor [Dickmeyer et al.: column 35 lines 37].

Regarding claims 6, 7, 15 and 16, Budde et al. and Richeson, Jr. et al. disclose the essential elements of the claimed invention. However, Budde et al. and Richeson, Jr. et al. do not explicitly disclose wherein the support tube includes exterior and interior threads. Dickmeyer et al. disclose wherein the support tube includes exterior and interior threads [FIG. 2 - FIG. 9]. It would have been obvious to a person having ordinary skill in the art at the time of the invention was made to modify the teachings of Budde et al. and Richeson, Jr. et al. by including wherein the support tube includes exterior and interior threads. The skilled artisan would have been motivated to modify Budde et al. and Richeson, Jr. et al. as above for the purpose connecting the device together.

13. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Budde et al. (US Patent Number 5,431,134) in view of Richeson, Jr. et al. (US Patent Number 4,109,630), further in view of Berardinelli (US Patent Number 5,814,723).

Regarding claim 11, Budde et al. and Richeson, Jr. et al. disclose the essential elements of the claimed invention. However, Budde et al. and Richeson, Jr. et al. do not explicitly disclose ignition sensor comprises a light detector. Berardinelli discloses ignition sensor comprises a light

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detector. [column 2: lines 37-54]. It would have been obvious to a person having ordinary skill in the art at the time of the invention was made to modify the teachings of Budde et al. and Richeson, Jr. et al. by including ignition sensor comprises a light detector. The skilled artisan would have been motivated to modify Budde et al. and Richeson, Jr. et al. as above for the purpose indicating the status of the output [Berardinelli: column 2: lines 42-43].

Response to Arguments

14. Applicant's arguments filed on 07/06/2001 have been fully considered but they are not persuasive. The Amendment is insufficient to overcome the prior art of record.

The rejection under 35 U.S.C. 112, second paragraph need to be addressed by the applicant, because as mentioned above it is unclear to what and how the sensors are claimed in the design.

Applicant's arguments on pages 3-7 that box 16 in figures 1, 7, 8, 9 and 10, does not require descriptive legend. The examiner respectfully disagrees, because every box must have a descriptive legend. Applicant is requesting clarification on what are the essential elements and what are not essential. The examiner respectfully disagrees, because already mentioned in the first office action, and it is believed that it is not necessary to repeat them. Applicant argument that the limitations of claims 1 and 12 are not taught or suggested by the prior art. The examiner respectfully disagrees, because as explained in section 10 of the first office action mailed on 1/19/2001, the limitations including the comparator reads on the Budde et al. in view of

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Richeson, Jr. et al. Applicant mentioned that a copy of the "Hot Bike" June issue was submitted. The examiner did not find a copy in case anywhere. Applicant is arguing that the filtering technology that claimed in claim 3, is not taught by the prior art Richeson. The examiner respectfully disagrees, because claim 3 for the filtering system as claimed, reads on the prior art. Applicant argument that Budde et al. in view of Richeson, Jr. et al., further in view of Dickmeyer et al. disclose further features of the applicant's claimed invention. As was explained in the office action that the claimed limitations are taught by these prior art. *In re Ahlert*, 424 F.2d 1088, 1091, 165 USPQ 418,420 (CCPA 1970). Applicant may consider overcoming the above assertion of obviousness by demonstrating that provision of the above design achieves unexpected results relative to the prior art. *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990).

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wasseem Hamdan whose telephone number is (703) 305-3968. The examiner can normally be reached Monday-Thursday from 700AM-400PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Safet Metjahic can be reached on (703) 308-1436.

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The fax phone number for this Art Unit are (703)308- 7722, (703)308- 7724, (703)305-3432 or (703)305-3431.

Any inquiry of a general nature or relating to the status of this application should be directed to the Receptionist at (703) 308-0956

16. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703)308- 7722, (703)308- 7724, (703)305-3432 or (703)305-3431.

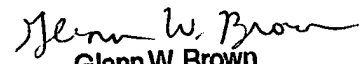
(for formal communications intended for entry, please label "FORMAL" and sign as attorney of record, for informal or draft communications, please label "PROPOSED" or "DRAFT" and prominently label PLEASE DELIVER DIRECTLY TO EXAMINER).

Hand-delivered responses should be brought to Crystal Plaza 4 [fourth Floor (Receptionist)], 2201 South Clark Place, Arlington, VA. 22202.

Wasseem H. Hamdan



July 18, 2001



Glenn W. Brown
Primary Examiner